

Feasibility study on composition and mechanical properties of marine clay based geopolymer brick

Abstract

Geopolymer is an inorganic polymer performed in synthesis process of an aluminosilicate material which activated by alkaline activator solution. Marine clay, considered to be a waste substance which have an important aluminosilicate sources in developing geopolymer synthesis since it contains sufficient amounts of alumina and silica. In this experimental study, local marine clay composition was been identified to determine the amount of alumina and silica. The raw sample compositions were identified by using X-ray fluorescence (XRF). Incorporated with it composition, compressive strength of brick were been tested in aged of 1, 2 and 3 day and compared with local production of cement brick (CB). This research is aimed at determining the properties of Kuala Perlis marine clay in order to verify its suitability as a pozzolana materials as well as the sufficient amount of Al and Si to enhance the properties of geopolymer brick.

Keywords; Composition, Compressive Strength, Geopolymer Brick, Marine Clay